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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,298	11/28/2001	Akira Unosawa	4110/0K066	4018

7590 05/03/2004

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EXAMINER	
BLAU, STEPHEN LUTHER	
ART UNIT	PAPER NUMBER
3711	

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/996,298	UNOSAWA ET AL.	
	Examiner	Art Unit	
	Stephen L. Blau	3711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33,42-45 and 50-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2,3,6,8,9,12,13,16,17,20,21,25,26,29,30,33,43-45 and 50-53* is/are allowed.

6)☒ Claim(s) *1,4,5,7,10,11,14,15,18,19,22-24,27,28,31,32 and 42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Request for Continued Examination (RCE)

1. The request filed on 30 January 2004 for a Request for Continued Examination (RCE) under 37 CFR 1.53(d) based on parent Application No. 09/996,298 is acceptable and a RCE has been established. An action on the RCE follows.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 4, 7, 10, 18, 24, 27, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honma and Noguchi.

Honma discloses a shaft with a plurality of fiber prepreg layers, a main layer consisting of resin impregnated high-strength high elasticity fiber in the form of carbon fibers (Col. 2, Lns. 65-68), a metal wire (Figs. 3-4, Ref. No. 15) layer over the main layer (Fig. 5), a layer of low-elasticity fiber in the form of a glass cloth sheet prepreg (Ref. No. 13, Fig. 3), a transparent coat (Col. 4, Lns. 50-51) the metal wires being visible to have an excellent appearance (Col. 5, Lns. 7-9), prior art showing metal wires wound about a

portion of a shaft bias in alignment helically winded in the form of spirally wounded (Col. 1, Lns. 45-49) in order to provide torsional resistance (Fig. 7, Col. 1, Lns. 45-52), layers with fibers bias in both positive and opposite directions (Fig. 5(b)), and the layer of low-elasticity fiber in the form of a glass cloth sheet prepreg having a thermosetting resin (Col. 3, Lns. 42-48). Honma does not specifically disclose the quality of the resin of the main layer but clearly an artisan skilled in the art of using resin for different fibers in a shaft would have selected a suitable resin for each layer in which the resin being the same is included.

Honma lacks a layer of low-elasticity fiber over the metal layer with resin through which the underlying metal wire layer can be seen, a metal wire located near to the grip area along the length of a shaft, metal wires aligned bias with the axis of the shaft, a first metal wire layer of metal wires spaced and aligned bias helically wound, a transparent layer laid over the first metal layer, a second metal wire layer of metal wires spaced and aligned in bias direction helically wound opposite of the first metal wire layer, the resin having the same quality for both the main layer and the transparent layer, and a material layer forming an outermost protective surface overlying the second metal layer would be in contact with the transparent layer. Noguchi discloses a layer of low-elasticity fiber in the form of glass cloth prepreg over string members in the form of fibers aligned bias to both directions to the longitudinal axis of a shaft with resin through which the string member can be seen (Col. 1, Lns. 25-28), the string members being along the entire length of a shaft (Fig. 1), and the string member can be wrinkled (Col. 1, Lns. 39-34). In view of the patent of Noguchi it would have been obvious to modify

the shaft of Honma to have the metal wires placed on the inner side of the glass cloth 13 or form the transparent coat of a glass cloth with transparent resin in order to protect the metal wires yet still allow the metal wires to be visible. In addition, in view of the patent of Noguchi it would have been obvious to modify the shaft of Honma to have a metal wire located along the entire length of the shaft including near to the grip area in order to provide longitudinal stiffness along the entire shaft for a strong golfer who swings the shaft fast and needs a stiff shaft. In view of the prior art if figure 7 of Honma and the patent of Noguchi it would have been obvious to modify the shaft of Honma to have metal wires aligned bias with the axis of the shaft helically winded in order to provide torsional resistance to a shaft when swung to minimize errors produced at impact due to the torsional flexing of a shaft when swung. In view of the patent of Noguchi and of the example of layers of figure 5(b) of Honma it would have been obvious modify the shaft of Honma to have the wire layer formed by two prepreg sheets with first metal wire layer of metal wires spaced and aligned bias, a transparent layer laid over the first metal layer, and a second metal wire layer of metal wires spaced and aligned in bias direction opposite of the first metal wire layer in order to prevent wrinkles. As such a material layer forming an outermost protective surface (Col. 4, Lns. 48-52) overlying the second metal layer would be in contact with the transparent layer.

It would have been obvious to modify the shaft of Honma to have the resin having the same quality for both the main layer and the transparent layer in order to simplify the manufacturing process by utilizing the same resin.

4. Claims 5, 11, 14-15, 19, 22-23, 28, 32 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Honma and Noguchi as applied to claims 1, 4, 7, 10, 18, 24, 27, and 31 above, and further in view of Suzue.

Honma discloses a method of winding a main layer on a mandrel in the form of a core and winding a glass prepreg having aligned metal wires bonded to (Col. 4, Lns. 19-65).

Honma lacks flat metal wires spaced with a spacing of .5 to 2 times as large as the wire width, a transparent layer having a thickness of 10-100 um and a method of winding the main layer on a tapered mandrel.

Suzue discloses a metallic member formed of flat metal wires with a thickness of 20-200 micrometers (Col. 3, Lns. 27-30) for decorative and reinforcing purposes (Abstract) having metal wires spaced with a spacing of .5 to 2 times as large as the wire width (Fig. 3). Noguchi discloses a method of winding layers on a tapered mandrel (Fig. 1). In view of the patent of Suzue it would have been obvious to modify the shaft of Honma to have flat metal wires spaced with a spacing of .5 to 2 times as large as the wire width in order to provide reinforcement and decoration to a shaft. In addition, in view of the patent of Suzue it would have been obvious to modify the shaft of Honma to have a transparent layer having a thickness of 10-100 um in order to provide sufficient coating to protect the metal wires from damage during normal use.

In view of the patent of Noguchi it would have been obvious to modify the method of Honma to have layers wrapped around a tapered mandrel in order to have a shaft which is light weight by having a small tip end and a large butt end.

With respect to claims 43-45 since these are apparatus claims, very little weight is give to method steps.

5. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honma and Noguchi as applied to claims 1, 4, 7, 10, 18, 24, 27, and 31 above, and further in view of Renard.

Honma lacks a head at one end of a shaft and a grip on the other end. Renard discloses a head at one end of a shaft and a grip on the other end (Fig. 1). In view of the patent of Renard it would have been obvious to modify the shaft of Honma to include a head at one end of a shaft in order to maximize energy transferred to a ball at impact and to include a grip on the other end of the shaft to assist a player in holding a club when swinging it. As such if the metal wires are along the entire shaft, the metal wires would lied in an uncovered area between a head and a grip.

Allowable Subject Matter

6. Claims 2-3, 6, 8-9, 12-13, 16-17, 20-21, 25-26, 29-30, 33, 43-45 and 50-53 allowed. With respect to claims 2, 8, 21 and 25, none of the prior art discloses or renders as obvious the metal wire layer as defined by the claims being formed in a discrete section along a length of the shaft adjacent a grip section of the shaft in addition to the other elements of structure claimed. With respect to claims 3, 6, 9, 12-

13, 16-17, 20, 26, 29-30, 33, 43-45 and 50-53 none of the prior art discloses or renders as obvious the metal wire layer as defined by the claims being formed in a discrete section along a length of the shaft between a grip section and another shaft section that is free of metal wires in addition to the other elements of structure claimed.

Response to Arguments

7. The argument that the references are improper due to Suzue disclosing a grid as opposed to a first metal wire layer winded helically and then a second metal wire layer laid over the first meal wire layer and helically winded is disagreed with. Suzue was only used to show flat wires. Noguchi in combination of figure 5(b) of Honma were used to show the teaching of a first layer with a fiber/metal wire winded helically and then a second layer with a fiber/metal wire laid over the first metal wire layer and helically winded.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Blau whose telephone number is (703) 308-2712. The examiner is available Monday through Friday from 8 a.m. to 4:30 p.m.. If the examiner is unavailable you can contact his supervisor Teresa Walberg whose

telephone number is (703) 308-1327. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0858. (TC 3700 Official Fax 703-872-9306)

slb/ 30 April 2004

STEPHEN BLAU
PRIMARY EXAMINER